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## ABSTRACT

Theoretical correspondences between the language and play development of young children and developmental aspects of play and speech are discussed prior to a report of a study comparing categories of cognitive complexity nested within social categories of solitary play and self speech. Participants were 36 preschool boys and girls approximately 36, 48, and 60 months of age. Data were collected in six 5-minute observations for each child. Each play episode observed was coded for social participation complexity and utterances were coded for self speech, collective monologue, and socially adapted speech. Solitary play episodes and self speech utterances were then coded on dimensions of cognitive complexity. Results substantiate the view that categories of social play and social speech do not form hierarchical levels of development. The frequency of solitary play decreased significantly with age. A significant increase across age groups was found for group play. Interestingly, parallel play increased from age 3 to 4 and decreased from 4 to 5 years, suggesting that parallel play may be a formative context for the child's growing discrimination between private and social aspects of psychological functioning. Both solitary play and self speech showed developmental changes for cognitive categories. Implications of the findings for development and educational practices are discussed. (RH)

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The Development of Symbolic Expression in  
Preschool Play and Language

presented at the Annual Meeting of the  
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## INTRODUCTION

My original interest in studying the solitary play and egocentric speech of preschool children stemmed from my experiences as a preschool director working with young children and their parents.

In terms of play, I was struck by the tendency of young preschoolers (age 2-3) to insist on playing alone. Admonitions to "share" seem to elicit genuine distress from many children in this age group. In comparing the behavior of older children (age 4-5) in the same setting, I also noticed solitary play, and the character of it seemed quite different. Older children deliberately chose materials and contexts and used language that signaled their privacy to others. Those children who played at private fantasy or construction also seemed to play well with their peers. I became curious how the skill to engage in both group and private play develops from age two to five.

Along with my concern as a teacher for the facilitation of the skills of balancing the needs of self and other, came the comments of parents who expressed concern over the phenomenon of early childhood behavior commonly referred to as "egocentric speech". What was the meaning of those long conversations in the bathtub (with no apparent listener). Was it normal?

In pursuit of answers that might help my practice as an educator of parents and children, I explored the literature on solitary play and egocentric speech, and found them both characterized as immature and "para-social" forms of symbolic expression. I became interested in the parallels in development that one might find during the preschool years, as play and speech are the primary vehicles for the young child's expression of symbolic meanings. In addition, these areas provide the context for the child's social communication and definition of self in relation to the environment.

This paper describes a model for the study of both phenomena as they co-develop. Based on the findings of a 1979 pilot study, a model that compares the cognitive complexity of self speech and solitary play has been developed. Self speech is defined as self-communicative speech in both private and social settings. Solitary play is defined as play alone in both private and social settings. In neither case is the presence of another person seen as a stimulus to speech or play, but each may take place in a social setting.

In an age when increasing numbers of young children are being cared for in group settings, there is a need for research to guide educators in facilitating intellectual and social learning appropriate to a child's stage of development. The practical application of this study is the development of a set of descriptive categories for self speech and solitary play that encompasses both cognitive and social dimensions. These categories provide a basis for appropriate assessment and intervention in language and play behavior in preschool settings.

#### THEORETICAL CORRESPONDENCES BETWEEN LANGUAGE AND PLAY

Recently, child development literature has begun to address the structural and sequential correspondences that may be traced by examining in parallel the language and play development of young children. This research focuses on two central theoretical points:

1. Both language and play rely on an underlying process of progressive symbolic "distancing" in mental representation. Each domain reflects the growth of the "semiotic function" in early childhood (Piaget, 1962), defined as the "cognitive capacity which accounts for representation across such media as play, language, drawing and mental imagery" (McCune-Nicholich, 1981, p. 786).
2. Both language and play development involve progressive differentiation and

reintegration of social and private aspects of intellectual functioning. Each involves the young child's skill in differentiating the perspectives of self from others and the reintegration of those perspectives in social contexts. Both language and play involve "decentration" in the child's ability to encompass more than one social perspective or one aspect of a situation simultaneously.

#### Development of the Semiotic Function

Much of the research centering on the theoretical aspect of the development of the semiotic function is focused on the language and play of infants and toddlers, as this is the period when pretend play and language begin to appear. In both language and play the child constructs global symbolic meanings that are gradually differentiated and decontextualized in their application. The child's early pretend play and first words are very context-specific. Gradually, the child employs an internal "plan" that relates symbolic elements in "rule-based" ways. Language is constructed using syntactic rules and pretend play shows evidence of "planfulness" in the child's choice of objects to transform symbolically.

This shift from a reliance on immediate context to rule-based, planned behavior may be extended into the range of play and language behavior observed during the preschool years. The functional play of the preschooler closely resembles the sensorimotor play of infancy, with little symbolic transformation evident. Constructive play, with blocks or sand, for example, involves symbolic transformation but is tied to the concrete objects available in the context. In dramatic play, rule-based behavior appears, with objects and roles purely imagined and rules of behavior negotiated "as you go". Games with rules, appearing near the end of the preschool years, involve both rule-based behavior

and planning strategies to negotiate successful play with pre-arranged rules.

In the language domain, much preschool speech is sensorimotor in nature; random juxtaposition of words or sounds with no clear communicative intent. This speech resembles the sound play of infancy. Preschool children also engage in monologues, commenting on the immediate situation as action unfolds. In role play speech, the child engages in dialogues with rule-based behavior for different characters or objects (a dragon puppet speaks in a low voice, for example). In self guiding speech the child exhibits "planfulness" in guiding his/her behavior and predicting consequences.

Although most of the evidence for the correspondences between language and play development has been drawn from the child's early symbolic functioning rather than from the preschool years, Corrigan (1982) and Fischer (1980) suggest that relationships between language and play may occur throughout childhood at points in development where the two strands share the same specific representational skills, although one might not see one to one mapping of language behavior to play behavior.

In viewing language and play behavior one might note evidence of increasing symbolic distance between referents and symbolic vehicles. The child's use of pretend transformations of objects and planfulness in language and play supports the development of abstract representation. Behavior indicating appropriate use of private and social modes of symbolic expression may be seen as evidence of processes that differentiate and integrate social/public and individual/private aspects of psychological functioning. These strands occasionally meet at selected points to simultaneously exhibit specific skills, such as increased decontextualization or facility with more formalized rules of social communication.

### Social and Private Aspects of Psychological Functioning

In addressing the second aspect of theoretical correspondence between language and play development, the differentiation and integration of social and private aspects of psychological functioning, Sutton-Smith (1966) and Vandenberg (1981) draw parallels between Vygotsky's description of language development and the development of early childhood play.

In Vygotsky's model, the early speech of the young child contains both personal and social elements. The child does not differentiate speech intended for self communication from speech intended to communicate with others. As the child's skill with language develops, the personal and social components of speech become differentiated and more situation-specific. Social speech becomes more adapted to the viewpoint of the listener. Private speech becomes interiorized and abbreviated as it matures into the "inner speech" of adult abstract thought. Social speech becomes more explicit and rule-bound in its expansion into public forms that serve "the universe of discourse" (Vygotsky, 1962). Private speech becomes increasingly "telegraphic" in form, as single words or phrases summon meaning collapsed into an idiosyncratic thought form.

Private and social forms of speech are described as relatively undifferentiated in both form and function during the preschool years, a phenomenon termed "egocentric speech" by Piaget. By age 5 or 6, these two forms diverge in structure and the child shows an increasing awareness of contexts appropriate to each. Social speech becomes increasingly adapted to the perspective of the listener and private speech exhibits a self-regulatory function in problem solving tasks (Kohlberg et al., 1968; Wertsch, 1979).

Early symbolic play traces a similar developmental pattern. Initially the young child does not differentiate self-action from other-action in his/her pretend transformations. With development, the child becomes skilled at

enacting pretend transformations of both self and others, using gesture or verbalization to mark one role from another. For example, a child may use voice pitch and hand movements to assume the parent or baby role in solitary dramatic play. During the preschool years, perspectives of other players become integrated into the child's symbolic play, marked by group dramatic play sequences with rules negotiated ad hoc. As children approach middle childhood, solitary dramatic play becomes increasingly interiorized as personal fantasy, reverie or exploration of hypothetical alternatives, and loses its overt expression in the presence of others.

Private and social forms of play are relatively undifferentiated in form and function during the early preschool years (age 2 to 4) giving rise to the phenomenon of "parallel play". During parallel play children may play with the same materials, each involved in personal fantasy and exhibiting no overt awareness of or cooperation with peers.

By age 5 or 6, private play and social play become increasingly differentiated in both form and context. Social play expands from ad hoc rule negotiation to contexts in which rules are prearranged, nonfluctuating and mutually binding (Piaget, 1962). Private play becomes increasingly task-oriented and independent in its social contexts, and more covert in gestural and verbal expression (Moore, Evertson and Brophy, 1974; Rubin, et al., 1976). External actions are interiorized and condensed to internal images and private play.

Vandenberg (1981) notes:

It is not coincidental that the development and differentiation of social and self regulatory speech is temporally meshed with the evolution of social game playing and fantasy. Both these processes are interrelated, and are reflections of a more fundamental differentiation and integration of the social and private aspects of psychological functioning. (p. 363)

In summary, two important parallels between the development of play and language during early childhood may be seen. The first is the expansion of the child's representational skills and capacity for symbolic "distancing" (Werner and Kaplan, 1963). The second parallel is the child's growing differentiation of social and private forms of symbolic expression.

#### SOCIAL CATEGORIES OF CHILDREN'S PLAY: SOLITARY PLAY

In the now classic study of social participation in preschool play, Mildred Parten (1932) designated solitary play as the least mature form of play behavior. Her categories of social play complexity were as follows: solitary play: plays alone, with others not stimulating play; parallel play: plays beside but not with other children; presence of the other is a stimulus to play; associative play: plays and shares with others; cooperative play: group play in which roles and activities are negotiated among players. Parten also defined onlooker behavior as the child watching others play, but not attempting to join in. This behavior is peripheral to play, but not play behavior.

However, recent work suggests that, rather than reflecting an immature or unsocialized orientation to others, solitary play may be viewed as the first indication of the child's discrimination of private modes of functioning from social modes. As such, it is not replaced by group play as the child develops, but instead becomes more distinct in context and less communal in expression as it becomes interiorized as private fantasy.

Evidence for this view of solitary play comes largely from work that nested Piaget's (1962) categories of play (sensorimotor, constructive, dramatic and games with rules) within the social categories described by Parten (1932). Piaget's categories address the mental representational "distance" between concrete objects and contexts and the symbolic transformations of those elements. This describes the first of the theoretical dimensions on which

correspondences between the development of language and play have been drawn. Parten's categories essentially address the child's growing discrimination between private and social forms of symbolic expression, the second of these theoretical dimensions.

Results from these "nesting" studies (Rubin et al. 1976, 1978) generally support a view of solitary play as a category of social participation that changes in cognitive complexity with age.

Solitary play moves from predominantly sensorimotor (functional) at age 3, to predominantly symbolic (constructive and dramatic) at age 5. The solitary play which reflects a social-cognitive necessity for the very young child becomes a social-cognitive option for the older one. From this view, it is possible to consider solitary play as embodying both the most cognitively and socially "immature" behavior in young children, and the most cognitively and socially "mature" behavior. It appears that with age, solitary play becomes progressively differentiated from social play in both its content and context, ultimately available in the child's repertoire as a choice, rather than a necessary limitation of thought and communicative skill.

Other researchers have raised issues concerning parallel play similar to those surrounding the developmental fate and function of solitary play.

Some researchers see it as the next likely candidate for the most immature form of play (Johnson, Ershle and Bell, 1980). Others believe it might indicate the child's growing capacity for social expressivity and emerging differentiation between social and private aspects of play (Mueller and Brenner, 1977) or even work as a transition between other modes of social play (Brownlee and Bakeman, 1980; Smith, 1978).

In this paper parallel play is seen to reflect the young child's emerging differentiation between social and private aspects of play. As such, it may

encompass transitional behavior between episodes of self and group play. It may also increase in frequency at a given period in development and then decline, indicating its replacement by more clearly differentiated "options" in the child's behavioral repertoire. As such, it may be seen as an intermediate category between solitary play as a limitation, and solitary and group play as differentiated options. The child who engages in much parallel play may be exploring those options and attempting to construct categories of social and private behavior appropriate to given contexts.

Parallel play essentially reflects the child's exploration of social and private aspects of functioning. As these aspects become increasingly differentiated in form and function, parallel play declines in frequency and cognitively sophisticated forms of solitary and group play increase.

Parten's original study of children ranging from 3 to 5 indicates just such a curvilinear trend: an increase in parallel play from age 3 to 4 and then a decrease from 4 to 5. It seems possible that parallel play, rather than being the next candidate for the socially most "immature" form of play may actually serve a developmental function during the preschool years. It may be seen as private play cast in a social form or social play cast in a private form. It may provide the opportunity for children to experiment with both private and social forms, to mix their contexts and ultimately to choose "self" or "group" play to meet their needs.

#### SOCIAL CATEGORIES OF CHILDREN'S SPEECH: EGOCENTRIC SPEECH

The literature on social and private speech in early childhood reflects theoretical controversies similar to those surrounding preschool play. Like solitary play, some theorists regard egocentric speech as an indication of the young child's limited capacity for social communication. Others see it as the precursor to sophisticated internalized abstract thought. It may be that

egocentric speech, like solitary play, can be viewed as a dimension of early childhood behavior that changes in both cognitive complexity and social discrimination as the child develops, and reflects both limitations and options in the child's behavioral repertoire.

In reviewing the literature on egocentric speech, I found speech categories developed by Piaget (1962) that appeared to describe degrees of symbolic distance from immediate time and space (echolalia, monologue, dialogue and self guiding speech) combined with "social" categories of speech (self speech, collective monologue and socially adapted speech). The most comprehensive work addressing these categories was done by Kohlberg, Yaeger, and Hjertholm (1968).

Kohlberg and his colleagues provided several provocative leads to the search for developmental parallels between preschool language and play:

1. They found a linear increase in self guiding speech with age, a finding seen to support Vygotsky's view that egocentric speech evolves into inner speech.
2. Dialogue, conceived of by Kohlberg et al. as a speech category involving questions asked and answered by the self, was thought to serve a major developmental function in the evolution of egocentric speech by providing articulation of the perspectives of both self and other. Contrary to expectations, this category appeared infrequently in their data.
3. Egocentric speech (including both collective monologue and speech to the self) traced a curvilinear course of development through early childhood, a pattern coinciding with findings in the literature on parallel play. Such a finding indicated the possibility that collective monologue, like parallel play, may be seen as evidence of increased social expressivity and formative of discrimination between social and private forms of psychological functioning.

4. In addition to a comprehensive review of the theoretical controversies surrounding the work of Piaget (1926) and Vygotsky (1962) related to egocentric speech, Kohlberg and his colleagues added the perspective provided by the work of George Herbert Mead (1934).

#### Mead's Theory Applied to Speech

The addition of Mead's theory to the discussion of egocentric speech contributes two important new elements:

1. The child's discrimination between the self-as-subject and the self-as-object in formulating communicative intent.
2. Planfulness in the construction of meaning prior to speaking aloud.

For Mead, social objects and physical objects each acquire meaning for the child through the process of social interaction. The child formulates meaning for social objects before s/he formulates meaning for physical objects. The responses to physical objects are social in the sense of emotional attachment or affective response to an object. The child also assigns the attitude of the other to inanimate objects. In the process of calling out in the other the same response s/he would call out in the self, the child comes to see physical objects as those that return no social response. In each case, the formation of meaningful objects (both social and physical) is based on the response of the object to the child's action, and the subsequent readjustment of that action, completing the response and mentally coding it for future interaction.

Parallel to the process of constructing social and physical objects, the child also constructs meaning for him/herself as a social object. Mead (1934) notes:

The importance of communication lies in the fact that it provides a form of behavior in which the organism or the individual may become an object to himself. (p. 139)

Communication, then, presupposes two forms: communication with oneself and

communication with others. In order to communicate with the self the child must develop a stable unified concept of self. Differentiation of communicative intent requires a clear discrimination between self and other.

### The I and the Me

Mead's notion of the I and the Me in the self adds the important dimension of the development of self-consciousness to the concept of differentiation-of-self-from-other common to other theories of social development (Piaget, 1962; Werner and Kaplan, 1963).

The interactional process between the self and the other contributes to effective discrimination between self-as-subject and other-as-subject. There is also a constant interaction within the self between the I and the Me. The self-as-subject (I) is constantly in dialogue with the self-as-object (Me). These two elements of the self arise in the context of social interaction, but then take relatively autonomous roles in stabilizing the unified self.

The I has a need to assert it's uniqueness and spontaneity. It is the non-reflective part in each of us that enjoys our own success and is the source of our novel behavior and creativity.

The Me in the self behaves appropriately in social situations, masters conventional social gestures and expressions of affect. The Me continually reflects on self behavior from the perspective of the organized attitude of others.

In mastering the intricacies of communicative competence, the child must first differentiate the role of self from other. This differentiation of self from other is central to both Piaget's and Vygotsky's views of egocentric speech. In addition; socially adapted speech requires that the child take the role of the listener with regard to the self and coordinate the self-as-subject (the "I") with the self-as-object (the "Me"), a point contributed by Mead's

theoretical perspective.

For Mead, both verbal thought and self guidance come from the internalization of experience in the "speech community" or social context of language (Mead, 1934). The young child does not "plan" the course an utterance will take as an adult does. Meaning is called out for the child as s/he utters speech for his/her listener. "The child's use of the gesture calls out implicitly in himself the response he overtly calls out in the other" (Mead, 1934, p. 112).

#### Collective Monologue

One aspect of the literature on egocentric speech that is not adequately addressed by theoretical comparisons between Vygotsky and Piaget is the role of collective monologue in the development of both socially adapted and private speech.

Here, again, the perspective of Mead (1934) is useful. Mead asserts that the child simultaneously communicates meaning to the self and to the other when s/he speaks. Prior awareness of shared meanings and predictions of responses only come with more clear differentiation between private speech and social speech.

From Mead's view, collective monologue may be seen as the process through which the child develops differentiation of meaning to the self from meaning to others. The child communicates information to the self through the form of communicating to the other. Private speech is cast in social forms and social speech is cast in private forms.

Like parallel play, then, the presence of collective monologue in the child's behavior may be seen as evidence of increased verbal interaction with others and formative of discrimination between social and private forms of communication.

### Evolution of Egocentric Speech

The work of Wertsch (1979) further illuminates and clarifies the role of both dialogue and planfulness in the evolution of egocentric speech. Wertsch's paper, like Vygotsky's work, focuses primarily on the development of self guiding private speech, but may be seen to have application to other forms of self speech not specifically related to problem solving.

Wertsch criticizes the previous literature on private speech on two grounds:

1. Studies have failed to account for the social context of interaction or the "language game" that sets the sociolinguistic rules for speaker and auditor.
2. Studies have failed to address the origins of egocentric speech in earlier forms of social communication.

Wertsch's interpretation of Vygotsky's work tends to support a Meadian view of the evolution of egocentric speech. Specifically, that inter-psychological functioning in a social context leads to intra-psychological functioning in higher order conceptual operations. Conceptual activity in a social context leads to independent individual functioning in problem solving situations.

Wertsch's study examined the verbal interactions of parents and preschool aged children (ages 2 1/2 to 5) in solving a puzzle-making task. His analysis incorporated four levels of communication designed to illustrate the transition from "other-regulation" to "self-regulation" of the problem solving context.

One of Wertsch's central points is that the child comes to share the adult's definition of a task situation and the implicit meanings of verbal directives only after carrying out the task and attempting to bridge action to the adult's utterances. The child does not carry out the task in response to understanding the total meaning of the adult directive. As Mead (1934)

suggests, meaning is construed through the process of social interaction and gradually becomes mentally represented in a degree sufficient to predict and plan responses and courses of action. Both the planning function (representational "skill") and intentionality (communicative "will") that characterize the adult role in a problem solving context are gradually developed by the child. The child integrates both the self-as-subject and the other-as-subject into his/her self communicative repertoire.

For the present study, the Wertsch/Vygotsky constructs have been expanded to include the child's self-speech in non-task situations (e.g. dramatic play) as well as problem solving contexts (e.g. puzzles or block construction). In both cases the child has internalized the role of the "other" and verbally expresses both self and other roles in self speech.

#### METHODS

My research design compared categories of cognitive complexity nested within social categories of both solitary play and self speech, as these were the questions generated by my classroom observations. I felt that the success of this technique in the play literature warranted its application to the literature on egocentric speech.

In addition, I compared the developmental curves for parallel play and collective monologue as these categories have emerged as possibly representing social immaturity and/or phenomena of symbolic expression in early childhood that may be formative of later facility with discrimination of private from social contexts and forms of expression appropriate to each.

#### Participants

The school is in a small community (population 16,000) located in the San Francisco Bay Area. The population has nearly doubled in the last ten years with middle class families drawn in by new housing developments. All families

in the study are of middle class socio-economic levels, as measured by the Hollingshead Index. The preschool has a membership of 60 families. Of the 44 families who volunteered to participate in the study, 36 children were randomly selected until the criteria of age and sex for each group were met. Specifically, all children were from two-parent families, with both parents living at home. At least one parent was a regular participant in the child's cooperative classroom. This meant that all the parents had had some exposure to the concepts underlying the school's curriculum, which is based on discovery learning and children's play.

Participants were divided into three age groups. Table 1 shows the mean ages, ranges and number of participants for each group.

Data collection: Naturalistic Observations

On the basis of a preliminary study conducted by the author in 1979, it was decided to record six 5-minute observations for each child, yielding a total of 216 protocols based on a total of 30 minutes of observation time for each child.

The recording was done by the two teacher-directors of the school. Both were usually present in the classroom, along with five participating parents. This order provided maximum opportunities for uninterrupted observations without limiting the children's access to adult guidance.

Observations were made following a hand-written, time sampling technique described by Wright (1960, 1967). All utterances of the target child were recorded verbatim, with the content and contexts of action and/or verbalization of others noted. In many cases, it was possible to record elaborate verbal exchanges and play episodes including several children in addition to the targeted child.

Observers were trained using the format for observational recording and inter-observer reliability described by Singer (1973). Protocols recorded simultaneously by the observers were rated independently by two outside judges during the training period to determine the congruity of the two observers. Percentages calculated as number of episodes agreed on divided by total number of episodes recorded yielded inter-observer reliability scores of .83 to .96 throughout the training period.

Following training, observers randomly selected children out of the pool of 36 participants for observation during the school's free activity time over an eight week period. All children had been attending preschool for a minimum of four months at the time of observation.

Observations for the present study were equally distributed over areas that might "pull" for different patterns of play and social interaction. For each child two 5-minute observations were collected in each of the following areas: outdoor or large motor area; art room or puzzle and game area; sand or water play; dramatic play areas (firehouse, playhouse, beauty parlor, restaurant, spaceship).

#### Coding: Play

Observational protocols were divided into episodes according to shifts in content or context. Episodes were based on the child's sustained involvement with an object or role and transitions between such involvements (Nicholich, 1977). Non-play episodes such as hanging up a coat, eating, drinking or caring for personal or emotional needs were excluded from the analysis. Onlooker behavior as defined by Parten (1932) and Smith (1978) was considered as a separate category of behavior.

Each play episode was coded for social participation complexity:

Solitary play (SP): plays alone. Parallel play (PP): plays beside but

not with other children. Associative play: plays and shares with others. Cooperative play: social play in which there is a defined division of roles. It was decided to combine the latter two categories into Group play (GP) on the recommendation of Rubin et al. (1978) that distinctions between associative and cooperative play required too much inference on the part of the observer.

Percentages for each category of social play were calculated based on the total number of play episodes for each observation. Solitary play episodes were then coded along the dimension of cognitive complexity, adopted from those derived from Piaget by Smilansky (1968).

1. Functional play (SPF): simple repetitive muscle movements, with or without objects.
2. Constructive play (SPC): manipulation of objects to construct or to "create" something.
3. Dramatic play (SPD): the substitution of an imaginary situation, objects or roles.
4. Games with rules (SPG): the acceptance of pre-arranged rules and the adjustment to these rules.

In terms of representation, constructive play reflects a level of symbolization above that of functional play (where there are no symbolic transformations) but the symbol is still tied to the concrete object. In dramatic play and games with rules the symbol may be removed from its tie to concrete objects or people. For the purposes of this study constructive play was viewed as a category of symbolic activity because "manipulation of objects to construct or create something" clearly involves both a signifier and a signified.

For the purposes of theoretical consistency, games with rules were included as a cognitive complexity dimension of solitary play, although no instances of

it had been found in the 1979 preliminary study.

Percentages of each category of solitary play were calculated for each child as follows: number of episodes within a given category of solitary play divided by the total number of solitary play episodes.

Weighted scores representing a "mean cognitive level" of solitary play for each child were calculated (adapted from Rubin, 1973) as follows. Each category was weighted 1-4 according to increasing levels of cognitive complexity:

- Level 1 Functional solitary play
- 2 Constructive solitary play
- 3 Dramatic solitary play
- 4 Games with rules solitary play

The weight of each category was multiplied by the number of episodes at each level for each child and then divided by the total number of solitary play episodes for the child. Numbers on this dimension ranged from a low of 1.25 to a high of 3.00 with scores of 1.95 representing an average level of solitary play complexity for the total sample.

#### Coding: Speech

Utterances in the protocols were divided according to units of meaning based on content or context. Utterances were then coded for three categories of social speech adapted from Kohlberg et al. (1968).

These categories of social speech: self speech, collective monologue, socially adapted speech were separately defined following Kohlberg:

Self speech (SS): speech directed to the self; provides stimulation, commentary, or information to the speaker.

Collective monologue (CM): speech to the self cast in a social form; apparently directed at others but poorly adapted to the listener or context.

Socially adapted speech (SA): speech directed to the listener and adapted to the responses of the listener and/or shared context.

Percentages of each category of social speech were calculated, based on the total number of utterances for each observation. Self-speech utterances were then coded on the dimension of cognitive complexity adapted from Piaget (1926) and Kohlberg et al. (1968):

1. Echolalic self speech (SSE): self stimulating speech, repetition of sounds or phrases.
2. Monologue self speech (SSM): speech accompanying ongoing action in the immediate context.
3. Role play self speech (SSR): speech in which the role of "another" is implicit or verbalized. As noted in the review section, Kohlberg et al. (1968) conceived of Mead's notion of role play or dialogue as questions addressed to the self. In this study dialogue was defined more broadly, including speech that reflected the child playing the role of another in relation to the self, and questions addressed to the self were coded as self guiding speech.
4. Self guiding self-speech (SSSG): comments which guide actions, indicate planning. Percentages of each category of cognitive complexity as applied to self speech were calculated as follows for each child: number of echolalic self speech utterances of a given category of self speech divided by the total number of self speech utterances.

Weighted scores representing a "mean cognitive level" of self-speech for each child were calculated following Rubin (1973): Each category was weighted 1-4 according to increasing levels of complexity.

- |         |                          |
|---------|--------------------------|
| Level 1 | Echolalic self speech    |
| 2       | Monologue self speech    |
| 3       | Role play self speech    |
| 4       | Self guiding self speech |

The weight of each category was multiplied by the number of utterances at

each level for each child and divided by the total number of self-speech utterances for that child. Numbers on this dimension ranged from 1.71 to 2.89 with a score of 2.32 representing an average level of cognitive complexity for the total sample.

#### Inter-coder Reliability

Protocols were coded by the author and four trained assistants. "Practice" protocols were coded and compared with those of the author until the coding categories were refined and mutually understood. 90% of the 216 protocols were coded by the author and at least one other coder. Inter-coder reliability coefficients calculated following Boehm and Weinberg (1977) and Cohen and Stern (1978) ranged from .87 to .96 for those protocols. The remaining 10% were coded by the author alone.

#### RESULTS

Table 2 describes the group means, variances and sample sizes for each variable related to children's play and speech addressed in the study. The reader will note that, although the age range for the present study is ages 2 to 5, statistical results are reported according to mean ages for the three groups (ages 3, 4 and 5).

Percentage data were used as the dependent variables in planned trend analysis by means of orthogonal contrasts. Table 3 shows the variables,  $t$  values, degrees of freedom and significance levels for these variables. Percentages were used, rather than raw frequencies, in order to control for individual differences in the number of play episodes and utterances for the sample, following Kohlberg et al., 1968; Rubin, 1973; Rubin et al., 1976; Sponseller and Jaworski, 1979.

Sex differences in developmental patterns of play and speech were examined

first. The median test using Chi Square values was applied to scores for all levels of play and speech. No statistically significant differences were found between the sexes. Accordingly, scores for both sexes were combined for analysis of research questions related to categories of play and speech.

#### Cognitive Complexity of Play and Speech

As illustrated in Figure 2, for 3 year olds, functional solitary play (SPF) was the predominant form of solitary play, followed by constructive solitary play (SPC) and dramatic solitary play (SPD). The same relationship among cognitive categories of solitary play held at age 4, except that the relative differences among means were quite small. By age 5, dramatic solitary play (SPD) had become the predominant form of solitary play, and functional solitary play (SPF) the least frequent form. Functional play had been displaced by symbolic play as the predominant form. At all age levels, constructive solitary play (SPC) fell in the middle range of frequency and did not change significantly across age groups.

Solitary games with rules (SPG) was included for purposes of theoretical consistency, although few or no instances of such play were expected. One instance of solitary games with rules (SPG) was recorded from a subject in Age Group II. Statistical analyses were not performed because of the low frequency of episodes in this category.

Across all age levels, monologue self speech (SSM) and role play self speech (SSR) were the two predominant forms of self speech. As noted with cognitive categories of solitary play, relative differences between means for the 4 year olds were quite small, with monologue self speech (SSM) decreasing and role play self speech (SSR) increasing at age 4. For both the 3 year olds and the 5 year olds, mean percent differences in frequency for monologue self speech (SSM) and role play self speech (SSR) were much larger, indicating more

differentiated forms at these ages.

Echolalic self speech (SSE) and self guiding self speech (SSSG) remained the least frequent forms across age levels. However, at age 3, echolalic self speech (SSE) was much more frequent than self guiding self speech (SSSG). By age 4, the means for these frequencies were very similar, and by age 5, self guiding self speech (SSSG) had become slightly more frequent than echolalic self speech (SSE), suggesting that the planning function of self guiding self speech (SSSG) displaced the sensorimotor nature of echolalic self speech (SSE).

(These trends are illustrated in Figure 2.)

#### Parallels in the Development of Play and Speech

Trend analysis for the variables of parallel play (PP) and collective monologue (CM) yielded significant quadratic trends, increasing from age 3 to 4, then decreasing from age 4 to 5. These findings substantiated the hypothesis that both parallel play (PP) and collective monologue (CM) trace similar developmental curves from age 3 to 5. The major difference in these trends is that the mean for parallel play (PP) at age 5 is lower than the mean at age 3, and the mean for collective monologue (CM) at age 5 is higher than the mean at age 3. Pearson correlation coefficients for parallel play (PP) with collective monologue (CM) were significant for the total sample ( $N=36$ ;  $r=.35$ ,  $p<.05$ ) and for Age Group II ( $N=12$ ;  $r=.66$ ;  $p<.05$ ). (Table 4) High frequencies of parallel play (PP) were accompanied by high frequencies of collective monologue (CM).

Trend analysis for the variables of total complexity of solitary play and total complexity of self speech yielded significant linear increases for both measures, substantiating the hypothesis that both solitary play and self speech increase in overall cognitive complexity from age 3 to 5. (See figure 4) Pearson correlation coefficients for these two variables were significant for the total sample ( $N=36$ ;  $r=.42$ ;  $p<.01$ ) and for Age Group I ( $N=12$ ;  $r=.50$ ;  $p=$

.05). High complexity scores for solitary play (SP) correlated with high complexity scores for self speech (SS). (Table 4)

Although both solitary play (SP) and self speech (SS) showed significant increases in cognitive complexity across age groups, the shapes of these trends are different. The cognitive complexity of solitary play (SP) increased steadily from age 3 to 5. The cognitive complexity of self speech increased sharply from age 3 to 4, then leveled off from age 4 to 5. Combined with a similar trend for number of utterances, the trend for total complexity of self speech might indicate that self speech (SS) begins to be covertly vocalized for older preschoolers, while solitary play (SP) remains overt behavior at age 5.

Trend analysis for the variables number of play episodes and number of utterances yielded a significant linear decrease for the number of play episodes and a significant linear increase for number of utterances, substantiating the hypothesis that as the number of play episodes decreases, the number of utterances increases from age 3 to 5.

## DISCUSSION AND IMPLICATIONS FOR EDUCATIONAL PRACTICE

### Social Categories of Play and Speech

Results from the study substantiate the view that categories of social play (solitary, parallel and group) and social speech (self speech, collective monologue and socially adapted speech) do not form hierarchical levels of development. This finding supports previous research on solitary and parallel play (Rubin et al., 1978; Smith, 1978).

The finding that the frequency of solitary play decreased significantly with age is in accord with those of Barnes (1971), Parten (1932), Rubin et al. (1978), and indicates a general trend toward more differentiation between social and private forms of play in the developing preschool child.

The youngest children in the study (mean age of 3) engaged in significantly more solitary play and onlooker behavior than the 4 and 5 year olds. The relative predominance of solitary vs. group play shifted from age 3 to 5 indicating that the solitary play that is a necessary limitation of social "will" and cognitive "skill" for the 2 to 3 year old may become a social-cognitive option available to the 4 to 5 year old in accordance with the social context and his/her expressive needs. At age 3, children may be aware of the social perspectives of others, but are not yet able to represent them. At 4, perspectives of others are represented, but not yet coordinated with self perspective. At 5, children represent social perspectives of others and are able to coordinate those representations with their own perspectives.

In direct complement to the decreasing trend with age for solitary play, is the significant increase across age groups for group (associative and cooperative) play. It appears that, with age, preschool children develop cognitive and social skills that enable them to negotiate roles, rules and shared meanings effectively with their peers.

One of the most interesting findings is the curvilinear trend for parallel play. Parallel play increased from age 3 to 4, and decreased from 4 to 5. This finding supports the findings of Barnes (1971), Mueller and Brenner (1977), and Parten (1932) who found similar developmental trends in their research with preschool children.

The implications for development are that parallel play may represent a category that is formative of the child's growing discrimination between private and social aspects of psychological functioning. The 4 year old who engages in much parallel play may be exploring behaviors appropriate to both social and private aspects of functioning. By age 5, differentiation of forms appropriate to each context is reflected in a decrease in parallel play, accompanied by

group and solitary play as nearly equal frequencies of behavior. Perhaps, parallel play is an adaptive behavior at age 4, affording the child an opportunity to practice behaviors appropriate to both private and social aspects of psychological functioning, and to further refine contextual discrimination between the two. Research on social perspective taking in language (Martlew, et al., 1976; Shatz & Gelman, 1973) indicates that situations requiring obvious discriminations between self and others, such as speech to toddlers or adults, elicit appropriate language from 4 year olds. According to Vygotsky (1962) and Werner & Kaplan (1963), situations requiring more subtle discriminations between self and others (age cohorts) elicit increasingly appropriate social responses as children develop. Increasing experience with peers enables children to differentiate requirements of group play from those of solitary play and to integrate perspectives of others who are more subtly different from the self.

Mueller and Brenner (1977) note such a role for parallel play in studying social interaction of younger children:

These results suggest a positive role for parallel play. Rather than showing the limits of children's social skills, parallel play is instrumental in producing peer social interaction. (p. 859)

One implication of the finding is that parallel play might vary with the age range of peers for the child. With age-mates, children may not easily discriminate subtle borders between "self" and "other". They may make assumptions about their peers in a shared context of meaning that has not been clearly defined. With playmates who are obviously younger or older, children may be more sensitive to the obvious discriminations of shared meaning. As noted, sociolinguistic research on egocentric speech has shown that children modify linguistic behavior when their listeners are obviously different from the self. Vygotsky (1962) reported similar findings for the incidence of egocentric speech with normal children and deaf children. Like collective monologue,

parallel play can be seen as an indication of the child's process in refining discriminations between perspectives of the self and others and between private and social forms of functioning.

The ways in which children use parallel play as transitional behavior is another issued raised in the literature. Qualitative analysis of the parallel play episodes in this study indicated that some children do use parallel play as an entry into social play, for example:

Carol (4 years, 2 months) approaches Brad who is sitting on top of the stairs. He has opened a lunch box that is filled with paper. Carol picks up a piece of paper and holds it to her mouth, smacking her lips. "yum, yum," she says, smiling at Brad.

Some of the more imaginative children also use parallel play as a means of enticing or "pulling" less sophisticated players into a dramatic play sequence. For example:

David (5 years, 2 months) is in the playhouse with Kris (3 years, 2 months). He picks up a large toy snake, and says, "Pet snake! Pet snake! Pet snake! Hey honey!" He brings the snake into the house. Kris continues to put together her puzzle, kneeling on the floor. David reaches in the oven. "OK! Those cupcakes are finished!" He closes the oven and glances toward Kris.

Forman and Kushner (1977), in discussing effective intervention strategies for preschool teachers, indicate that playing parallel, and then changing useage of a material is an effective, unobtrusive means for adults to intervene in children's constructive play. It seems that children do this with other children as well.

Another finding from the study was the linear decrease in onlooker behavior from age 2 to 5. Although Rubin (1982) notes that teachers generally consider this behavior "benign" rather than indicative of social incompetence, he found that children who watch rather than participate are less mature chronologically and mentally than those who choose to participate.

In this study, the youngest (age 2 1/2 - 3) subjects were the ones most likely to watch others play with few moves to join in.

Mary (2 years, 11 months) picks up a bean bag from the shelf, sets it on the steps, then crawls under the steps, watching Robin construct a house of cardboard bricks.

Kristine (3 years, 4 months) walks slowly into the tumbling room, hands in her pockets. Alice invites her to play store with them. Kristine approaches the table with the cash register and stands with her hands in her pockets, watching.

It seems that this behavior is, in part, "information gathering" about behaviors appropriate to social contexts, and that older children "watch and scan" (Smith, 1978) less frequently and with the purpose of choosing among alternative social choices.

Alice (4 years, 8 months) dries her hands on a paper towel, throws it away and strolls into the activity room. She pauses to watch several children playing a board game, then watches a group in the playhouse. She enters the playhouse, laughing, and taps Kevin on the head. "Knock - knock."

Teachers observing such behavior in young children may want to facilitate the child's "information gathering" or "choice making" process by talking to the child about what s/he sees and guiding the onlooker to imagine ways in which s/he could participate.

With the exception of collective monologue, which correlated significantly with parallel play and traced a similar developmental curve, the social speech categories defined for this study (self speech, collective monologue, socially adapted speech) did not show the same developmental trends found for social play. Frequencies of self speech and solitary play were significantly correlated, however, indicating that these behaviors tend to occur together for individuals, even though age-related patterns differ. This relationship, coupled with more detailed analysis of variables from the home environment affecting individual differences, provides a provocative lead for future research.

Self speech, as an absolute category, showed no significant trend across age groups, indicating that self communicative speech may be a form of symbolic

expression common to many ages. As adults, we continue to talk to ourselves, sing to ourselves, make note of events and plan for the future. What does apparently change is the ability to discriminate social contexts appropriate to private forms of self speech and those in which self speech is sub-vocalized or interiorized. Preschool children have not differentiated the self-as-subject (the "I" in Mead's terms) from the self-as-object (the "me" in Mead's terms) to discriminate the formal rules of self communicative speech in varying social contexts.

The frequency of socially adapted speech also did not change significantly across the age groups studied. From a qualitative analysis of the data, what did change was the nature of socially adapted utterances. The younger children (2 1/2 to 3 1/2) typically used socially adapted speech to negotiate with others over concrete materials.

Two 3 year olds are playing parallel with dollhouse materials.

Hillary: "What's this, Jason?"

Jason: "It's stairs. You walk up it."

The older group (4 1/2 to 5 1/2) used socially adapted speech in more cognitively distanced ways; they negotiated with one another over shared play themes and roles.

Two 5 year olds in the playhouse:

Brian: "I'm the father."

Nicholas: "No, I'm the father."

Brian: "I'll be the grandfather. Then we can both be fathers."

Alternatively, they spoke to one another consistent with the roles played and contingent on the role identity and utterances of the other player.

Alice (4 years, 6 months), Ann (3 years, 6 months) and Marty (4 years, 5 months) are playing "Star Wars"

Alice: "They hurt me, Luke!"

Marty: "Who did?"

Alice: "The storm troopers! Help! help! My hands are tied up. Oh, space kitty (to Ann), We're stuck! Get your claws and get the rope off us!"

Within the theoretical model presented, the change in the nature of

socially adapted speech reflects the child's increasing ability to use language distanced from concrete objects and present contexts to abstract mutual representations of objects, themes and roles.

Teachers of young children may facilitate mental representation in social speech by encouraging children to verbalize thoughts in shared contexts. Younger preschoolers will most appropriately share ideas about concrete objects or props in their play, older preschoolers can be encouraged to verbalize thoughts on shared experiences (both real and pretend) and roles and themes implicit in their dramatic play. In this way, teachers may facilitate the movement of "implicit" rules seen in dramatic play to "explicit" rules governing shared meanings and perspectives in games with rules.

This implication is consistent with Wertsch's (1979) point that the transition from inter- to intra-psychological functioning in problem solving moved from shared physical cues to shared abstract concepts of meaning needed to play the "language game".

The finding of a curvilinear course of development for collective monologue substantiates the view that collective monologue, like parallel play, may be viewed as adaptive behavior for children engaging in group play. It is seen as formative of the child's growing discrimination between private and social forms of communication and contexts appropriate to each context. In the theoretical model presented, the child's growing differentiation between the "I" and the "Me", the informal and formal aspects of symbolic expression, is reflected in an increase in activity blending private and social forms. The "rules" of the "language game" become more specific as the child experiments with forms and contexts in social interaction. In Mead's terms, collective monologue reflects speech intended to communicate meaning to the self, through the form of communicating to the other. As private and social speech become more

differentiated in form, both prior awareness of meaning ("planfulness") and predictions of responses from others become consolidated schemes in the child's language repertoire.

Four years old is often characterized as the "golden age" of fantasy by preschool teachers. This is the age when play with the peer group begins to dominate solitary play, and yet private and social forms of symbolic expression are mixed. As the four year old experiences this mixture of forms in contexts of shared meaning, both parallel play and collective monologue increase in frequency, and then decline, indicating their replacement by more clearly differentiated "options" in the child's behavioral repertoire.

#### Cognitive Categories of Solitary Play and Self Speech

As expected, both solitary play and self speech showed developmental changes for cognitive categories. Total cognitive complexity of each dimension increased significantly across age groups and complexity scores for solitary play and self speech correlated significantly. This substantiates findings from the literature reviewed and reflects the theoretical dimension of increasing abstraction in mental representation, or cognitive "distancing" of symbolic vehicles from immediate physical and contextual cues.

Specifically, functional or sensorimotor solitary play showed a significant decrease across age groups, while the highest level of symbolic play measured (dramatic solitary play) increased at a level closely approaching significance. These findings support the cognitive developmental hierarchy found in the work of Rubin and his colleagues, and imply that a large proportion of functional solitary play is typical of a younger preschooler (age 2 1/2 to 3 1/2). With age, preschool children integrate increasingly abstract symbolic elements into their solitary play.

In terms of the cognitive categories applied to speech, only self guiding

self speech showed a significant change across ages. The linear increase for self guiding self speech supports previous research and theory in this area (Kohlberg et al., 1968, Vygotsky, 1962; Wertsch, 1979).

Self guiding self speech incorporates two important aspects of development: a level of mental representation that enables the child to encode the meaning of an utterance based on past experience, and "planfulness" in predicting a response from another person, an object or a sequence of events.

As Wertsch (1979) points out, "planfulness" in self guiding speech comes only after the child has an opportunity to act in a situation and bridges action to meaning in interpreting the utterances of another. This experience is coded for future use until a scheme incorporating the roles of both self and other becomes apparent in self guiding speech.

Presumably, the self guiding speech of older preschoolers reflects the overt form of this dialogue that will later be interiorized as inner speech, following both Piaget and Vygotsky's theories. For younger children, monologue appears to have much the same function as self guiding speech, without the element of planfulness.

Jill (3 years, 4 months) washes her doll's arms and legs with a baby wipe. She stands the doll up facing her. "I'm trying to dress my baby."

It may be that the planning nature of self guiding speech is "layered on" to the essentially self guiding nature of monologue as the child's capacity for mental abstraction grows. Monologue self speech remained fairly constant across the three age groups in this study, with self guiding speech an increasing category after age 4.

One of the difficulties that emerged in coding the utterances in this study was the question of dialogue. As noted earlier, Kohlberg et al. (1968) conceived of dialogue as questions asked and answered by the self. For this

study, dialogue was more broadly defined to include self speech dramatic sequences in which the child took other roles.

It may be that questions asked and answered by the self are at the same cognitive level as role play, self speech. Both involve coordinating perspectives of self-as-subject and self-as-object in a situation. Self guiding questions may be seen to emerge in task-related situations, as described by Wertsch (1979), while role play dialogue emerges in dramatic play sequences. As such, dialogue that is self guiding in nature serves an accommodative function, while dialogue that is dramatic in nature may serve a more assimilative function. The negative correlation ( $-.32$ ) for self guiding self speech and solitary dramatic play, although not quite significant, might be seen to support this view.

One other qualitative observation concerning role play self speech is worth noting. The role play self speech of the younger children (age 2 1/2 to 3 1/2) involved much animation of objects: sounds that symbolically represented objects rather than characters.

Daniel (3 years, 9 months) is playing with a crane and a truck. He slides the crane off the back slowly. "Brrm - Brrm!" He hooks the chain on the back of the truck. "Sh - sh - sh," and runs the car across the rug. "Rmm! Rmm! Rmm!"

The role play self speech of older children was characterized by utterances based on inferences made about a character or a hypothetical situation rather than direct imitation of reality.

Marty (4 years, 6 months) is playing alone in the sandbox. M: (soft voice) "Well, I'm Lord of the jungle. That's why I'm Tarzan!" He jumps up, crouches, then looks over his left shoulder. "C'mon Cheetah! Let's run!"

As with self guiding speech, this overt enactment of the roles of self and others in hypothetical situations is thought to become interiorized as personal fantasy during middle childhood. From informal observations of children 7 to 10

years old, this interiorization is only evident in some social contexts. The older child has perceived that overt expression of fantasy dialogue is inappropriate in group contexts, yet engages in role play self speech when alone, with siblings or with close friends.

Perhaps speech does not become totally interiorized or socialized even for adults. Many adults report engaging in overt self speech when alone, and as noted earlier, "para-social" speech or collective monologue, may be common between adults who have intimate shared contexts of meaning.

One implication of the findings concerning the cognitive complexity of self speech is the role of questioning strategies in teaching young children. Implicit dialogue between the self and an imagined other helps the young child coordinate perspectives of self-as-subject with self-as-object and predict the perspectives of others with regard to the self. Teachers who are skilled in framing questions rather than directives may facilitate the child's transition from inter-psychological functioning to intra-psychological functioning in problem solving situations. (Wertsch, 1979)

In addition, teachers who participate in pretend role play dialogues with young children, assuming roles which complement the child's make-believe role, are providing experiences that will lead the child to represent and coordinate the perspectives of others with the self. They enable the child to predict social situations or create imaginary narratives in literature or play.

Another finding that has implications for teachers of young children is the lack of sex differences on any of the measures related to play and speech. As noted in the literature review, sex differences in play and language have been attributed to contexts that "pull" for varying kinds of play and social interaction. Apparently, the measures taken to control for observational

settings in this study were successful, as no significant sex differences emerged.

Teachers who assume that "girls are more verbal" or that "boys are more active" may need to reevaluate both their assumptions and the educational environments they design for preschool children in light of these findings.

#### SUMMARY AND CONCLUSIONS

As reviewed in earlier sections, parallels in the development of language and play rest on several theoretical points:

1. Both language and play involve the development of the "semiotic" function and increasing levels of "cognitive distance" in the child's mental representation of symbolic vehicles and referents.
2. Both language and play reflect progressive differentiation of "self" perspectives from "other" perspectives. As children develop, these differentiations become more refined and sensitive to subtle differences.
3. Both language and play change in the formality of contextual rules for expression. This dimension involves the child coordinating the self-as-subject ("I" in Mead's terms) with the self-as-object (the "Me") in order to discriminate forms of symbolic expression appropriate to given social contexts. In addition to learning to represent the self as a social object from the perspective of others, the child's understanding of rule structures that govern "language games" (or "play games") become more formalized. Rules that are implicit in private or intimate contexts become increasingly explicit in social contexts.
4. The element of "planfulness" in both play and language emerges as a skill that requires coordination of the mental representation of symbolic vehicles, representation of the perspectives of others and projection into future time from the immediate context. As the preschool child develops,

play themes are sustained and more fully elaborated, and speech in task situations becomes more self guiding in nature.

As both a practitioner and theoretician in the field of early childhood education, I can identify two areas of development that seem important for teachers of young children to facilitate.

The first is the child's development of the "semiotic" function; the progressive abstraction of mental representation. Along with this goes the child's skill in using symbols increasingly distanced from immediate physical space and time to express him/herself, and to participate in the creation of shared meanings. These shared meanings, based on symbolic representation, take place within the child's daily transactions and accommodations to the external world. They also take place in the child's commentary on symbolic expressions in and for themselves, as the child assimilates values and perspectives.

The second area of importance for teachers of young children is the facilitation of children's development of socially appropriate skills. To become "literate" is in large part to become "civilized", according to Wells (1981), and teachers are given the responsibility of guiding children to coordinate perspectives of others in social contexts with their peers. Preschool children learn to see themselves as social objects from the perspectives of others, and to negotiate social roles. They learn to represent perspectives of others and then to coordinate those representations with their own. In addition to developing awareness of the perspectives of "other" in relation to "self", preschool children also learn to communicate with peers and adults, and to discriminate communicative or expressive behavior appropriate to given social contexts. They learn to play the "language game" in both transactional discourse and poetic expression.

Teachers of young children who are cognizant of a child's need for privacy and self-dialogue as an integral part of the daily educational experience will enhance opportunities for social and intellectual development. Group play settings and expectations for language behavior are important elements for the skilled early childhood educator to consider. The social play behavior and language of a 3 year old may be very different from that of a 5 year old. Facilitation of solitary activity and monologue for a 3 year old may be seen to encourage stable development of the self, and provide a more solid basis for the cooperative play, sharing of ideas and social dialogue that characterize the speech and play of the older preschooler. Recognition of the 5 year old's need to choose both solitary and group play may be seen to support the development of communication and problem solving skills needed for the older child's transition to the elementary school environment.

Anecdotal observation of children in their daily classroom activities has long been a means to "get a sense" of an individual child's style of play and communication with others. This study indicates that such observations can also yield important information about the child's cognitive development, and can serve teachers in assessing and facilitating children's development of intellectual abstraction and social adaptation through language and play.

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TABLE 1

Age Ranges, Mean Ages and Sample Sizes  
for Groups I, II, III

|                          | N = 12<br>Group I |       | N = 12<br>Group II |       | N = 12<br>Group III |       |
|--------------------------|-------------------|-------|--------------------|-------|---------------------|-------|
|                          | M                 | F     | M                  | F     | M                   | F     |
| Age Range<br>(in months) | 33-39             | 33-39 | 42-51              | 42-54 | 55-65               | 57-63 |
| Mean Age<br>(in months)  | 37                | 35    | 48                 | 48    | 60                  | 60    |

TABLE 2

Group Means, Standard Deviations and Sample Sizes for all Dependent Variables Related to Play and Speech

| Dependent Variables             | Group Means |            |             | Standard Deviations |            |             |
|---------------------------------|-------------|------------|-------------|---------------------|------------|-------------|
|                                 | N=12<br>I   | N=12<br>II | N=12<br>III | N=12<br>I           | N=12<br>II | N=12<br>III |
| Social Play                     |             |            |             |                     |            |             |
| Solitary play                   | 175.3       | 138.3      | 132.9       | 16.3                | 32.5       | 27.1        |
| Parallel play                   | 86.7        | 102.6      | 66.7        | 35.1                | 20.8       | 38.7        |
| Group play                      | 93.8        | 122.8      | 150.2       | 21.6                | 33.4       | 20.6        |
| Social speech                   |             |            |             |                     |            |             |
| Self speech                     | 128.3       | 118.8      | 124.0       | 35.1                | 42.1       | 30.5        |
| Collective monologue            | 77.7        | 100.8      | 85.5        | 20.2                | 26.4       | 12.4        |
| Socially adapted speech         | 154.8       | 143.5      | 153.1       | 39.1                | 36.1       | 30.7        |
| Cognitive play                  |             |            |             |                     |            |             |
| Functional solitary play        | 142.5       | 119.8      | 77.8        | 32.7                | 62.8       | 63.5        |
| Constructive solitary play      | 106.7       | 114.7      | 127.3       | 46.0                | 64.0       | 82.6        |
| Dramatic solitary play          | 100.9       | 110.1      | 137.2       | 51.0                | 46.8       | 72.6        |
| Games/Rules solitary play       | 00.0        | 07.1       | 0.00        | 0.00                | 24.5       | 0.00        |
| Total cognitive play complexity | 1.70        | 1.97       | 2.18        | .31                 | .28        | .39         |
| Cognitive speech                |             |            |             |                     |            |             |
| Echolalia self speech           | 89.4        | 79.8       | 84.2        | 44.9                | 45.5       | 36.9        |
| Monologue self speech           | 134.1       | 116.0      | 124.3       | 51.9                | 50.8       | 33.3        |
| Role play self speech           | 100.0       | 118.1      | 102.8       | 83.1                | 47.9       | 58.1        |
| Self guiding self speech        | 54.8        | 76.6       | 87.0        | 39.2                | 31.2       | 27.4        |
| Total self speech complexity    | 2.04        | 2.47       | 2.48        | .71                 | .27        | .29         |
| Number of play episodes         | 14.4        | 13.5       | 12.5        | 1.9                 | 2.8        | 2.7         |
| Number of utterances            | 38.5        | 51.5       | 51.8        | 14.8                | 15.1       | 12.4        |
| Number of onlooker episodes     | 1.75        | .42        | .50         | 1.4                 | .67        | .91         |

TABLE 3

| Trend Analysis for Mean Transformed Percentages of Categories of Play and Speech |                 |                  |                   |          |          |        |
|----------------------------------------------------------------------------------|-----------------|------------------|-------------------|----------|----------|--------|
|                                                                                  | Group I<br>Mean | Group II<br>Mean | Group III<br>Mean | Contrast | MS       | t      |
| Parallel play                                                                    | 86.7            | 102.6            | 66.7              | -51.83   | 5373.40  | -2.26* |
| Group play                                                                       | 98.8            | 122.8            | 150.2             | 51.42    | 15862.03 | 4.87*  |
| Collective monologue                                                             | 77.7            | 100.8            | 85.5              | -38.50   | 2964.48  | -2.66* |
| Socially adapted speech                                                          | 154.8           | 143.5            | 153.1             | -1.75    | 18.38    | -.12   |
| Functional solitary play                                                         | 142.5           | 119.8            | 77.8              | -64.67   | 25090.68 | -2.89* |
| Constructive solitary play                                                       | 106.7           | 114.7            | 127.3             | 20.67    | 2562.67  | .77    |
| Dramatic solitary play                                                           | 100.9           | 110.1            | 137.2             | 36.25    | 7884.38  | 1.53   |
| Echolalic self speech                                                            | 89.4            | 79.8             | 84.2              | -5.75    | 165.38   | -.30   |
| Monologue self speech                                                            | 134.1           | 116.0            | 124.3             | -9.75    | 570.38   | -.52   |
| Role play self speech                                                            | 100.0           | 118.1            | 102.8             | 2.75     | 45.3     | .10    |
| Self guiding self speech                                                         | 54.8            | 76.6             | 87.0              | 32.75    | 6240.38  | 2.40*  |
| Number of play episodes                                                          | 14.4            | 13.5             | 12.5              | -1.92    | 22.04    | -1.90* |
| Number of utterances                                                             | 38.5            | 51.5             | 51.8              | 13.25    | 1053.38  | 2.30*  |
| Total complexity of solitary play                                                | 1.70            | 1.97             | 2.18              | 47.77    | 13348.18 | 3.47*  |
| Dependent variables                                                              |                 |                  |                   |          |          |        |
| Solitary play                                                                    | 175.3           | 138.3            | 132.9             | -42.33   | 10752.67 | -3.97* |
| Self speech                                                                      | 128.3           | 111.8            | 124.0             | -4.25    | 108.38   | .78    |
| Variables tested by non-parametric<br>test (Kruskal-Wallis)                      |                 |                  |                   |          |          |        |
| Total complexity of self speech                                                  | 2.04            | 2.46             | 2.48              | -8.59    | 1.85     | 3.99*  |
| Number of onlooker episodes                                                      | 1.75            | .42              | .50               | -10.56   | 18.5     | 6.15*  |

\* Critical Dunn value =  $t_{33}$ , .95=1.69.

\*\* Critical value for Kruskal-Wallis =  $\chi^2$ , .95=3.84.

TABLE 4

Pearson Correlation Coefficients for Comparable Categories of Play and Speech

(N = 36)

| Play                       |             |                      |                         |                       |                       |                       |                          | Speech                       |
|----------------------------|-------------|----------------------|-------------------------|-----------------------|-----------------------|-----------------------|--------------------------|------------------------------|
| Total Complexity           |             |                      |                         |                       |                       |                       |                          | .42**                        |
| Solitary Play              |             |                      |                         |                       |                       |                       |                          |                              |
| Solitary Games with Hules  |             |                      |                         |                       |                       |                       |                          |                              |
| Solitary Dramatic Play     |             |                      |                         |                       | .26                   |                       | -.32                     |                              |
| Solitary Constructive Play |             |                      |                         |                       | .18                   |                       |                          |                              |
| Solitary Functional Play   |             |                      |                         | .01                   |                       |                       |                          |                              |
| Group Play                 |             |                      | .31                     |                       |                       |                       |                          |                              |
| Parallel Play              |             | .35*                 |                         |                       |                       |                       |                          |                              |
| Solitary Play              | .38*        |                      |                         |                       |                       |                       |                          |                              |
|                            | Self Speech | Collective Monologue | Socially Adapted Speech | Self Speech Echolalia | Self Speech Monologue | Self Speech Role play | Self Guiding Self Speech | Total Complexity Self Speech |

\*  $p < .05$ \*\*  $p < .01$

FIGURE 1

Mean Transformed Percents of Social  
Categories of Play and Speech  
for Age Groups I, II, III

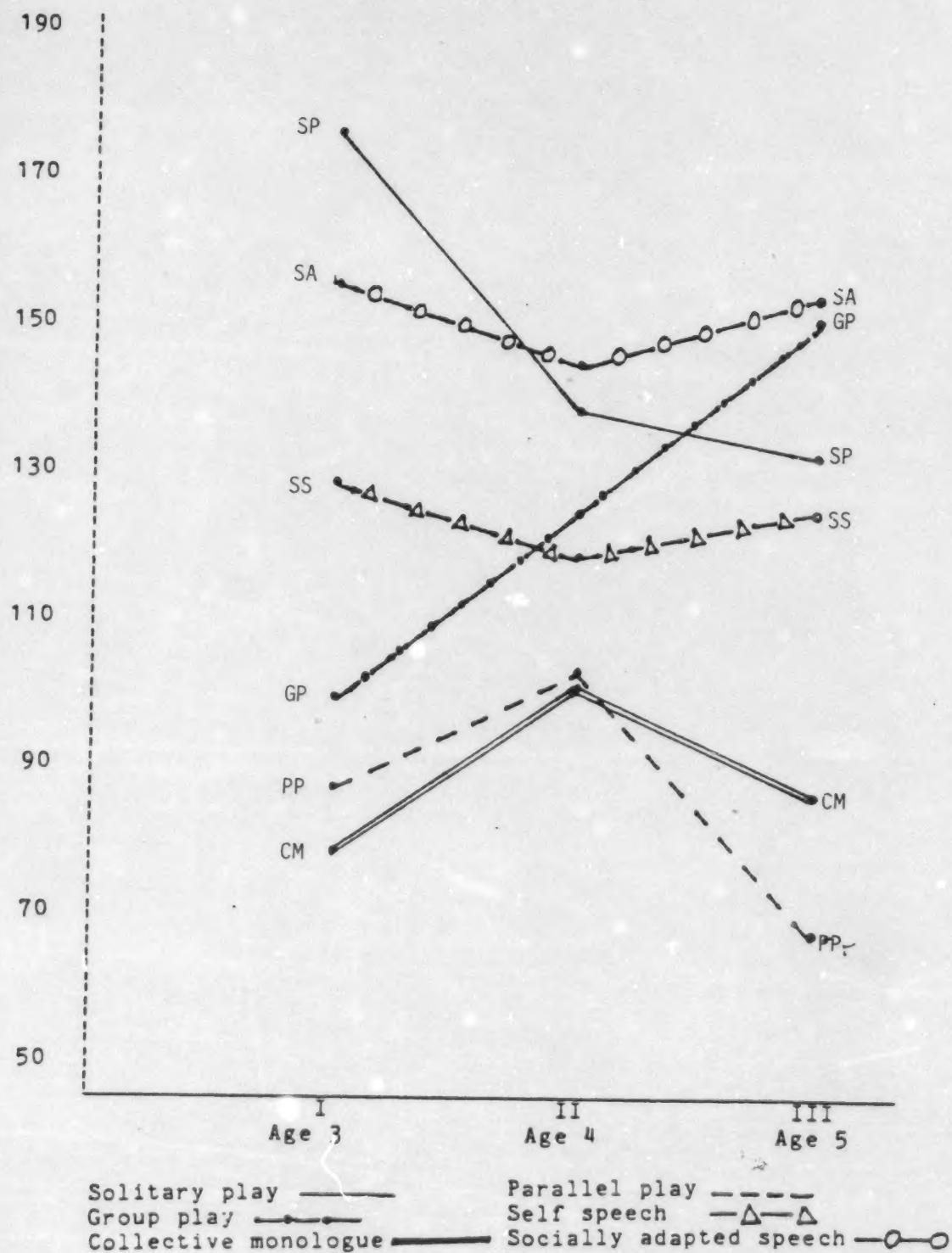


FIGURE 2

Mean Transformed Percents of Cognitive Categories  
of Solitary Play and Self Speech  
for Age Groups I, II, III

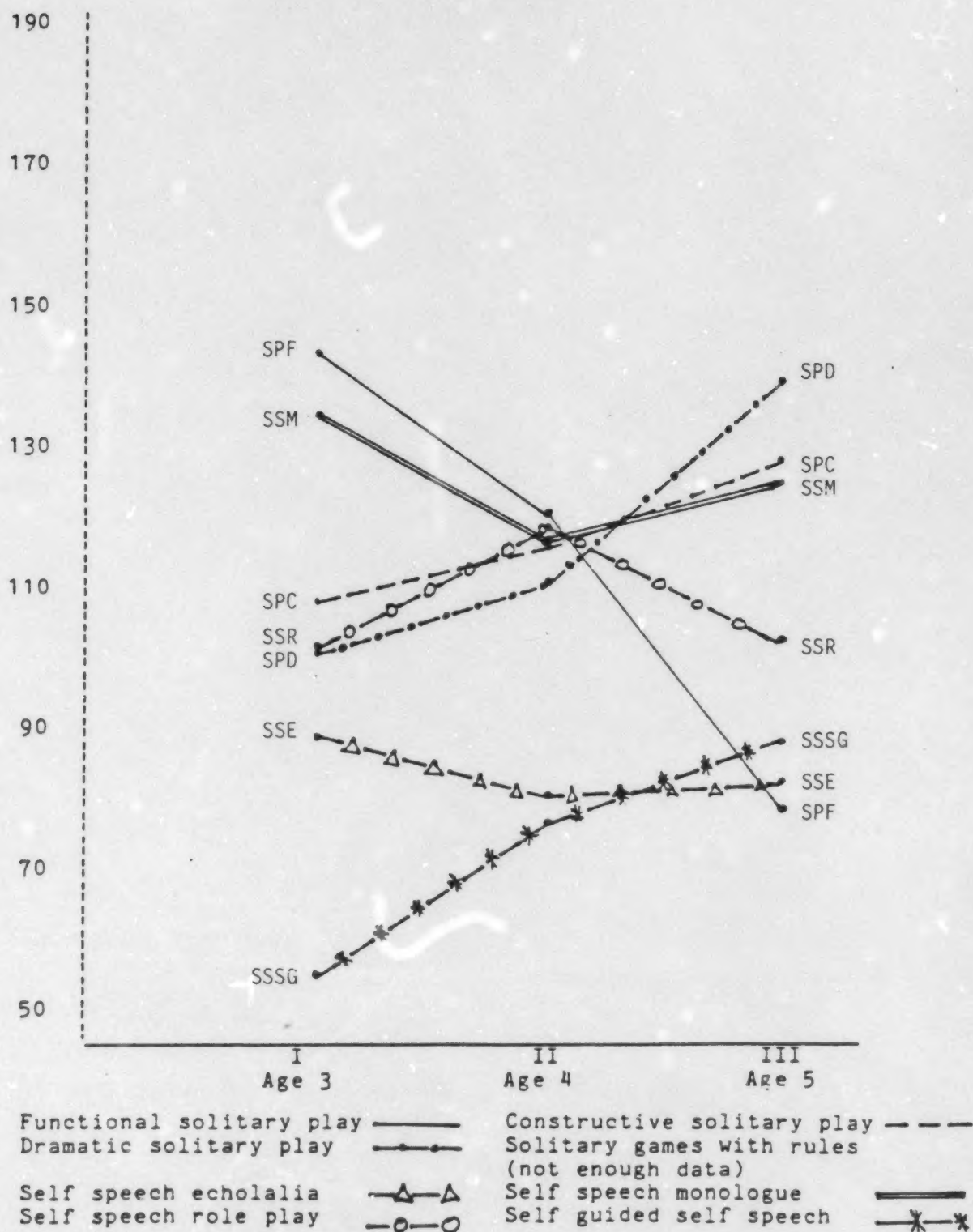


FIGURE 3

Mean Number of Play Episodes  
and Utterances  
for Age Groups I, II, III

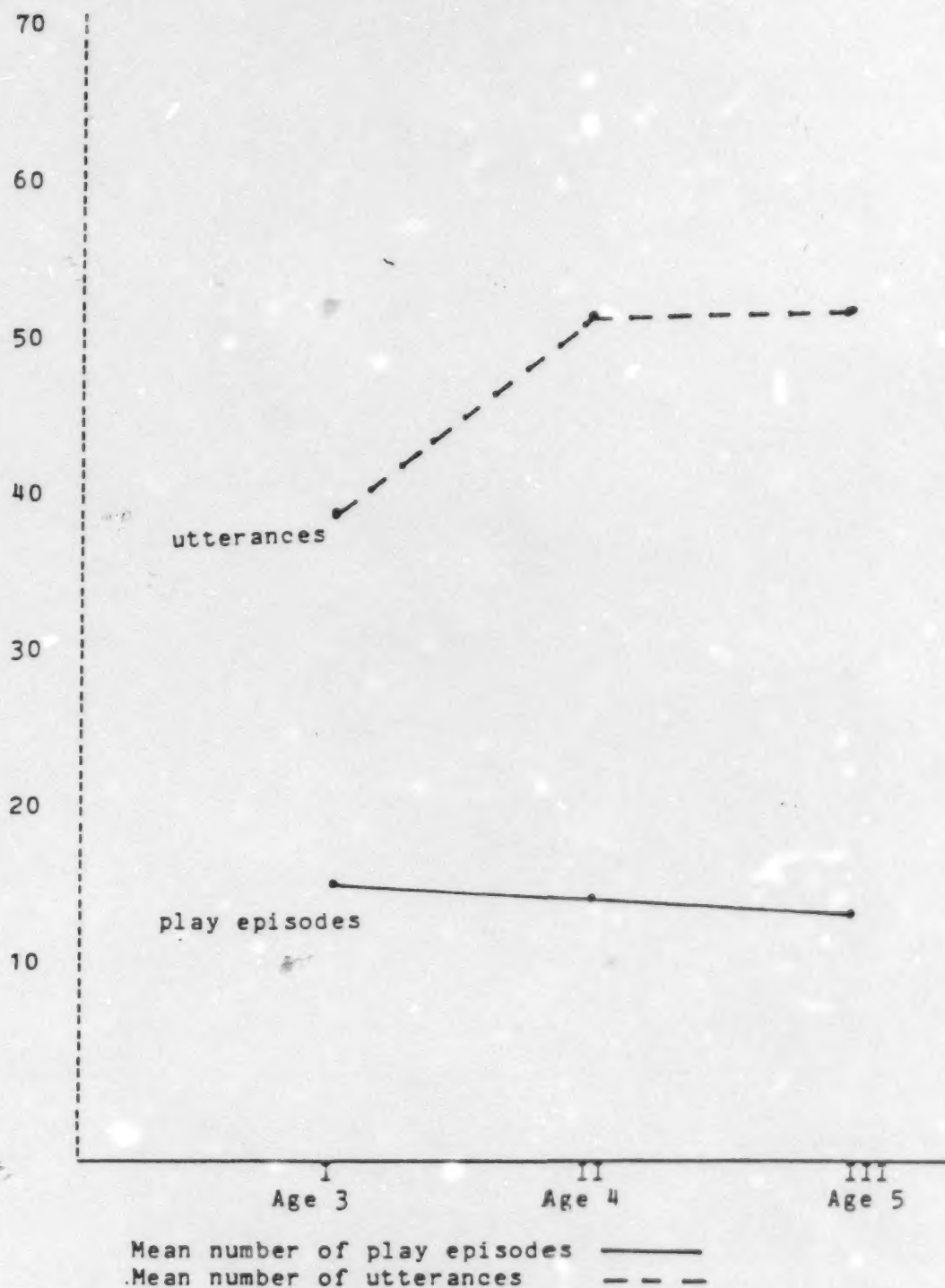


FIGURE 4

Mean Cognitive Complexity Scores for  
Solitary Play and Self Speech  
across Age Groups I, II, III

